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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,097	06/16/2006	Ulrike Licht	291599US0X PCT	1254
22850	7590	03/24/2009	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			FRANK, NOAH S	
			ART UNIT	PAPER NUMBER
			1796	
			NOTIFICATION DATE	DELIVERY MODE
			03/24/2009	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/583,097	<b>Applicant(s)</b> LICHT ET AL.	
	<b>Examiner</b> NOAH FRANK	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,5,7,8,10,12-14 and 16-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,7,8,10,12-14 and 16-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5, 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Antonietti et al. (US 2002/0032242) in view of Tiarks et al., "Encapsulation of Carbon Black by Miniemulsion Polymerization", Macromol. Chem. Phys., Vol. 202, No. 1, Pages 51-60, 2001.

Considering Claims 1 and 7: Antonietti et al. teaches polyaddition reactions in miniemulsions (¶0006) to produce aqueous dispersions (¶0007). The polyaddition reactions are also suitable for preparing particles which comprise polyadducts and, encapsulated therein, inert particulate solids (¶0014). The polyadducts are comprised of the reaction product of isophorone diisocyanate, neopentyl glycol (polyhydric alcohol, C=5) (¶0048), and water (¶0045). The miniemulsions are produced by mixing the reactants in water with surfactant and stirring (¶0021).

Antonietti does not teach suspending pigment particles in an aqueous medium with surfactant, followed by combination with the suspension of reactive monomer and conducting the polymerization. However, Tiarks et al. teaches encapsulating carbon black by miniemulsion polymerization wherein the carbon black and monomers are

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independently dispersed in water and subsequently mixed (p54). The carbon black is then encapsulated by polymerization (p51). Antonietti and Tiarks are analogous art because they are from the same field of endeavor, namely miniemulsion polymerization. At the time of the invention a person of ordinary skill in the art would have found it obvious to have used separate pigment and monomer dispersions, followed by mixing and polymerization, as taught by Tiarks, in the invention of Antonietti, in order to encapsulate a higher amount of pigment (p54 of Tiarks).

Considering Claim 2: Antonietti et al. teaches the particle sizes being from 200 to 230 nm (¶0045).

Considering Claim 3: Antonietti et al. teaches the pigment being organic materials or carbon black (¶0014).

Considering Claim 5: Antonietti et al. teaches hydrophobicizing (attaching hydrophobic compounds to the surface) the pigments by using the reactants of the polyaddition process (¶0014).

Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Antonietti et al. (US 2002/0032242) in view of Tiarks et al., "Encapsulation of Carbon Black by Miniemulsion Polymerization", Macromol. Chem. Phys., Vol. 202, No. 1, Pages 51-60, 2001, as applied to claims 1 and 7 above, and further in view of Licht et al. (US 2003/0105223).

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Considering Claims 13-14: Antonietti et al. teaches using the dispersions in all areas in which polyurethane dispersions are already currently in use, i.e, in particular, in adhesives, topcoats, and coating materials (§0005).

Antonietti does not teach using the dispersions for finishing leather or textile printing. However, Licht teaches using the dispersions for coating a variety of substrates such as wood, metal, plastics, paper (fibrous substrate), leather or textile, and for impregnating textiles (as a print paste) (§0091). Antonietti and Licht are analogous art because they are from the same field of endeavor, namely aqueous polyurethane dispersions. At the time of the invention a person of ordinary skill in the art would have found it obvious to have used the dispersions to finish leather and/or impregnate textiles, as standard uses of polyurethane dispersions.

Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Antonietti et al. (US 2002/0032242) in view of Tiarks et al., "Encapsulation of Carbon Black by Miniemulsion Polymerization", Macromol. Chem. Phys., Vol. 202, No. 1, Pages 51-60, 2001, as applied to claim 1 above, and further in view of Topham et al. (US 3,560,235).

Considering Claims 17-18: Antonietti et al. teaches the basic claimed process as set forth above.

Antonietti does not teach recovering the ensheathed pigments by a drying process. However, Topham et al. teaches urethane coated pigments in dispersion (1:10-35) that are filtered off, washed, and dried (3:65-70). Antonietti and Topham are

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analogous art because they are from the same field of endeavor, namely polyurethane modified pigments. At the time of the invention a person of ordinary skill in the art would have found it obvious to have filtered and dried the pigments, as taught by Topham, in the invention of Antonietti, in order to extract the polyurethane modified pigments.

Claims 19, 8, 10, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Antonietti et al. (US 2002/0032242) in view of Tiarks et al., "Encapsulation of Carbon Black by Miniemulsion Polymerization", Macromol. Chem. Phys., Vol. 202, No. 1, Pages 51-60, 2001 and in view of Licht et al. (US 2003/0105223).

Considering Claim 19: Antonietti et al. teaches polyaddition reactions in miniemulsions (¶0006) to produce aqueous dispersions (¶0007). The polyaddition reactions are also suitable for preparing particles which comprise polyadducts and, encapsulated therein, inert particulate solids (¶0014). The polyadducts are comprised of the reaction product of isophorone diisocyanate, neopentyl glycol (polyhydric alcohol, C=5) (¶0048), and water (¶0045). The miniemulsions are produced by mixing the reactants in water with surfactant and stirring (¶0021).

Antonietti does not teach suspending pigment particles in an aqueous medium with surfactant, followed by combination with the suspension of reactive monomer and conducting the polymerization. However, Tiarks et al. teaches encapsulating carbon black by miniemulsion polymerization wherein the carbon black and monomers are independently dispersed in water and subsequently mixed (p54). The carbon black is then encapsulated by polymerization (p51). Antonietti and Tiarks are analogous art

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because they are from the same field of endeavor, namely miniemulsion polymerization.

At the time of the invention a person of ordinary skill in the art would have found it obvious to have used separate pigment and monomer dispersions, followed by mixing and polymerization, as taught by Tiarks, in the invention of Antonietti, in order to encapsulate a higher amount of pigment (p54 of Tiarks).

Antonietti does not teach free-radical polymerizable monomers as component (c). However, Licht et al. teaches polyurethane dispersions (§0001) comprising components that carry functional groups such as olefinic groups (§0037), which are free-radically polymerizable. Antonietti and Licht are analogous art because they are from the same field of endeavor, namely aqueous polyurethane dispersions. At the time of the invention a person of ordinary skill in the art would have found it obvious to have used free-radically polymerizable monomers, as taught by Licht, in the invention of Antonietti, in order to crosslink the aqueous dispersion via free radical polymerization.

Considering Claim 8: Antonietti et al. teaches using 30.1g of water in  $(3.5+0.25+30.1+0.15)$ g of dispersion  $(30.1/34=88\%$  water) (§0058).

Considering Claims 10 and 12: Antonietti et al. teaches using the dispersions in all areas in which polyurethane dispersions are already currently in use, i.e, in particular, in adhesives, topcoats, and coating materials (§0005).

Antonietti does not teach using the dispersions for finishing leather or textile printing. However, Licht teaches using the dispersions for coating a variety of substrates such as wood, metal, plastics, paper (fibrous substrate), leather or textile, and for impregnating textiles (as a print paste) (§0091). At the time of the invention a person of

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ordinary skill in the art would have found it obvious to have used the dispersions to finish leather and/or impregnate textiles, as standard uses of polyurethane dispersions.

Claim 16 rejected under 35 U.S.C. 103(a) as being unpatentable over Antonietti et al. (US 2002/0032242) in view of Tiarks et al., "Encapsulation of Carbon Black by Miniemulsion Polymerization", Macromol. Chem. Phys., Vol. 202, No. 1, Pages 51-60, 2001 and in view of Licht et al. (US 2003/0105223), as applied to claim 19 above, and further in view of Kiljstra et al. (US 5,969,002).

Considering Claim 16: Antonietti et al. teaches the basic claimed process as set forth above.

Antonietti does not teach using the dispersions for producing inks for the inkjet process. However, Kiljstra et al. teaches pigment and polyurethane preparations useful as printing inks for inkjet printing (Abs). Antonietti and Kiljstra are combinable because they are from the same field of endeavor, namely pigmented polyurethane dispersions. At the time of the invention a person of ordinary skill in the art would have found it obvious to have used the dispersions as printing inks for inkjet printing, as a standard use of polyurethane dispersions.

### ***Response to Arguments***

Applicant's arguments filed 12/31/08 have been considered but are moot in view of the new grounds of rejection.



***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NOAH FRANK whose telephone number is (571)270-3667. The examiner can normally be reached on M-F 9-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/  
Supervisory Patent Examiner, Art Unit 1796

NF  
3-4-09